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TAKAMATSU YASUO**(54) **ANTENNA DEVICE**

## (57) Abstract:

**PURPOSE:** To attain the broad band characteristics without the need of an amplitude and phase adjusting circuit, by taking a subantenna for the control of side lobe as the reflection type phased array antenna constitution.

**CONSTITUTION:** A subarray antenna 12a is a polarized wave selecting element which passes through one polarized electromagnetic wave and reflects most of the other polarized electromagnetic waves, and the element is inserted to a notch of a part of a mirror surface to form almost the same flatness as the mirror surface. A phase shifter 12b, an attenuator 12c and a short-circuit plane 12d are fitted as layers on the element 12a at the rear side of the mirror surface. Electromagnetic waves incident to the element 12a are reflected other than the transmitted polarized electromagnetic waves to form a main beam, but the transmitted polarized electromagnetic waves pass through the phase shifter 12b and the attenuator 12c, are reflected on the plane 12d, pass through the attenuator 12c and the phase shifter 12b again and are radiated to the outside through the element 12a. The phase shifter 12b and the attenuator 12c are

electronically controlled for the provision of required phase shift and attenuation, allowing to obtain a desired radiation directivity.

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